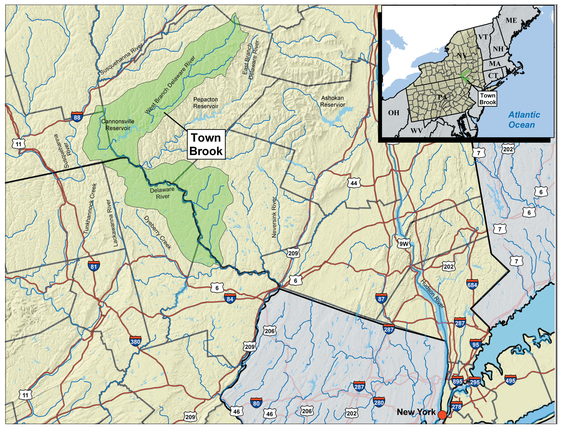
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

Town Brook Watershed, New York: 2004-2006

An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Measure phosphorus losses from dairy farms and evaluate effects of conservation practices in reducing phosphorus losses.

Watershed Description

- Drains into Cannonsville Reservoir, a major component of New York City's drinking water supply.
- 9,143 acres (Town Brook Watershed, sub-area of Cannonsville Reservoir Basin)
- 49% agroforestry; 48% grass and hay
- About 230 animal feeding operations in Basin (roughly 2/3 dairy, 1/3 beef)
- About 13,000 dairy cows and 1,200 beef cattle, total in both watersheds.
- Cannonsville Reservoir designated as phosphorus-restricted due to algal blooms that interfere with water treatment.
- A Total Maximum Daily Load (TMDL) has been established for phosphorus.
- Participant in Clean Water Act's Section 319 Nonpoint Source Pollution Program.

Issues: Runoff from Catskill dairy farms pollutes reservoir with phosphorus.

*Agricultural Research Service

Approach

Water sampling: Phosphorus and sediments

Watershed models: SWAT (Soil and Water Assessment Tool) linked with a best management practices (BMPs) tool to evaluate expected reductions in phosphorus losses; model will identify watershed hot spots where maximum reductions can be made in phosphorus losses at minimum cost.

Whole farm plans: To date, about 160 of the animal feeding operations in the Basin are participating in whole-farm planning. Approved BMPs are being installed under a 100% cost-share program supported by New York City.

Communicating Results

Three annual progress reports. Other reports: quantifying phosphorus reductions by individual BMPs, coupling of chemical and hydrologic processes controlling phosphorus losses to better understand how to control losses, suite of user-friendly indices and models to evaluate effects of BMPs.

Collaborators

- USDA, Natural Resources Conservation Service
- U.S. Geological Survey
- Delaware County Soil and Water Conservation District
- Watershed Agricultural Council
- New York City Department of Environmental Protection
- New York State Department of Environmental Conservation
- Cornell University Cooperative Extension
- Cornell University Department of Agricultural and Biological Engineering

Contacts

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Rainfall simulation experimental setup.

Soil moisture determination at a rainfall simulation site.

National Phosphorus Project rainfall simulation equipment.

Timeline

2003
Initial funding

2004
August CEAP bibliographies

2005
May Wetlands peer review
July Wildlife literature review (program-based)
October Cropland literature reviews
Wildlife literature review (practice-based)
Wildlife Work Plan
November Wetlands Work Plan
December Draft findings—Prairie Pothole region
1st ARS Benchmark Watersheds progress report

2006
February Preliminary habitat quality models—Prairie Potholes wetland region
March Preliminary National Assessment Report
December 2nd ARS Benchmark Watersheds progress report

2007
Fall National Assessment Final Report
December 3rd ARS Benchmark Watersheds progress report

2008
December 4th ARS Benchmark Watersheds progress report

www.nrcs.usda.gov/technical/nri/ceap/